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H. C. RAMSOWER, Director

THE PREPARATION OF BORDEAUX MIXTURE

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Bordeaux mixture prepared by the method given in this bulletin is of the very best quality—slow to settle and extremely adhesive. The labor of mixing is negligible compared with that of the old method, where both solutions were equally diluted and poured into the spray tank together.

MATERIALS

1. Copper sulfate (also called bluestone and blue vitriol).
   Cost—6 to 15 cents per pound, depending on amount purchased.
2. Lime, either hydrated or stone, never air slaked. (Hydrated lime is usually substituted for the stone lime because it is easier to secure in most localities.) Use a grade of lime that is free from grit.
   Cost—1 to 1½ cents per pound.

PREPARATION OF STOCK SOLUTIONS

1. Place 30 gallons of water in a barrel and suspend 30 pounds of copper sulfate in a sack just under the surface of the water. If this is done in the evening the copper will be entirely dissolved by morning.
2. To make a stock solution of lime, place 30 pounds of stone lime in a vessel, and add slowly a small quantity of water. When the lime is slaked thoroly, add water to make 30 gallons. If hydrated lime is used, 1½ pounds to every gallon of water will be required, or 45 pounds to 30 gallons of water. (Many use hydrated lime without making a stock solution.)

These stock solutions can be prepared in any amount desired and kept indefinitely.

It is a simple matter, with stock solutions prepared so that every gallon of liquid contains 1 pound of material (or 1½ pounds in the case of hydrated lime), to make bordeaux of any formula. The amount of lime in bordeaux is given in terms of stone lime, unless otherwise stated. Thus, 4-4-50 means:

4 pounds copper sulfate
4 pounds stone lime
50 gallons water

Or, when using the stock solutions made as above,

4 gallons copper sulfate solution
4 gallons milk of lime
42 gallons water

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TO FILL 100-GALLON SPRAY TANK WITH BORDEAUX 4-4-50

1. Dip from the stock solution of copper sulfate 8 gallons and pour it into the tank.
   (For a 2-2-50 mixture use 4 gallons.)
   (For a 5-5-50 mixture use 10 gallons.)

2. Fill the tank with water until there is about 80 gallons of liquid in it.

3. Stir and dip from the stock solution of lime 8 gallons. Pour this into a separate container and dilute to 20 gallons volume.
   (For a 2-2-50 mixture use 4 gallons.)
   (For a 5-5-50 mixture use 10 gallons.)

4. Pour the 20 gallons of lime solution thru a wire strainer having 20 mesh or more to the inch, into the tank containing the 80 gallons of the diluted copper solution. (See (a), (b), and (c) below.)

It is absolutely essential that this mixture be thoroly stirred, and this can be accomplished in one of several ways.

(a) If it is a power machine start the engine and have the agitator and pump running while the lime solution is being poured in. This agitation should be continued for some minutes.

(b) If it is a barrel or traction sprayer, pour in the lime just before starting for the field. The jolting involved in this trip will insure thoro mixing.

(c) If Bordeaux is being made in a bucket or other open container, a wooden paddle will serve to mix.

Thoro mixing is very important.

OTHER SPRAYING SUGGESTIONS

Many men spraying apple orchards add an excess of lime above that called for by the formula because of the susceptibility of this foliage and fruit to spray injury.

Commonly recommended formulas are:
2-2-50 (or 3 pounds hydrated lime) Summer spray for apples.
4-4-50 (or 6 pounds hydrated lime) Pink bud spray for apples.
5-5-50 (or 7½ pounds hydrated lime) For potatoes and celery.

When an arsenical is to be used in combination with the bordeaux, the proper amount is mixed with water until it forms a thin paste. This is poured into the finished bordeaux and stirred.

In conclusion it might be noted that in some places dusts containing copper have been substituted for the liquid bordeaux. In tests conducted in Ohio these dusts have given results very much inferior to those secured from liquid bordeaux sprays. Many small growers also used various commercial brands of bordeaux that are put out by spray-material companies. The objection to these is their cost. All are much more expensive than home-made bordeaux, and most of them settle out of solution very quickly.